

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 04154162
PUBLICATION DATE : 27-05-92

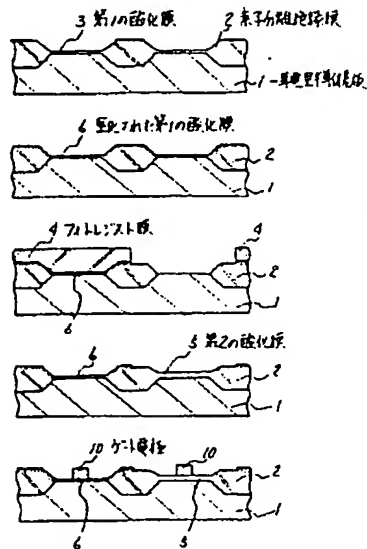
APPLICATION DATE : 18-10-90
APPLICATION NUMBER : 02280393

APPLICANT : NEC CORP;

INVENTOR : NAKADA HIDETOSHI;

INT.CL. : H01L 27/088 H01L 29/784

TITLE : MANUFACTURE OF MOS-TYPE SEMICONDUCTOR DEVICE



ABSTRACT : PURPOSE: To enable thickness of a nitrided oxide film and that of a later-formed oxide film to be set independently and achieve a positive integration with improved controllability by forming an oxide film at an element region for nitriding an entire surface and then by forming another oxide film with it as an oxidation-resistant film.

CONSTITUTION: An oxide film 3 is formed at each element region by thermal oxidation. Then, heat treatment is performed within nitrogen gas or ammonium gas environment for a short time for nitriding an entire surface. After that, thermal oxidation is performed for a short time and a film quality is homogenized, thus obtaining an oxide film 6 as a first gate insulation film. Then, after eliminating the film 6 using a photoresist film 4, thermal oxidation is performed and an oxide film 5 is formed as a second gate oxide film. At this time, the film 6 cannot be oxidized at all and the film thickness is not increased. After this, a gate electrode 10 consisting of a polycrystalline silicon is formed. The thickness of the film 6 and that of the film 5 can be set independently by this method and a plurality of MOS transistors can be integrated on the same substrate with improved controllability.

COPYRIGHT: (C)1992,JPO&Japio